CLAIMS

1. A method for controlling data flows to a terminal in a communications system which handles real-time application flows and non real-time application flows, said data flows being carried over at least one communications terminal with a predetermined limited bandwidth and with use of at least one protocol, said method comprising the steps of:

receiving, in the terminal, a set-up message for a real-time application communications session;

deriving from information in the set-up message a required bandwidth which is required on the communications connection for the real-time application flow to the terminal to be set up in connection with the communications session;

controlling, through manipulation of at least one protocol parameter, a bandwidth usage on the communications connection of at least one data flow to a non real-time application on the terminal so as to ensure that said required bandwidth is instantly available to said real-time application flow when it is set up.

2. A method according to claim 1, wherein the controlling step involves reducing the bandwidth usage on the communications connection of the at least one data flow to a non real-time application in order to free bandwidth on the communications connection for the real-time application flow to be set up.

3. A method according to claim 1 including the step of, after receiving said set-up message and deriving information regarding said required bandwidth from information in the set-up message, using an encoding method in the real-time communications session;

the real-time application providing a flow control application with information regarding the required bandwidth; and using the flow control application for controlling the bandwidth usage of the at least one data flow to a non real-time application based on said information received from the real-time application.

4. A method according to claim 1, wherein by controlling the bandwidth usage of the at least one data flow to a non real-time application flow comprises:

investigating if a data packet to be sent from the terminal is an acknowledgment packet;

if the data packet is an acknowledgment packet, determining by comparing a window size of the acknowledgment packet to information based on said required bandwidth if the window size should be reduced, which window size defines a maximum amount of unacknowledged data packets that a receiver of the acknowledgment packet should be allowed to send to the terminal on the data flow with which the acknowledgment packet is associated; and

reducing the window size, when such has been determined, by overwriting the window size with a lower value before sending said acknowledgment packet to the receiver.

5. A method according to claim 4, wherein the step of reducing the window size comprises overwriting the window size when the acknowledgment packet is in a transport layer.

6. A method according to claim 4, wherein the step of reducing the window size comprises overwriting the window size when the acknowledgment packet is in an Internet layer.

7. A method according to claim 4, wherein the step of reducing the window size comprises overwriting the window size when the acknowledgment packet is in a physical layer.

8. A method for controlling data flows from a terminal in a communications system which handles real-time application flows and non real-time application flows, which data flows are carried over at least one communications connection terminal with a limited bandwidth, which method comprises the step of:

initiating, in the terminal, a set-up of a real-time communications session;

determining a required bandwidth which is required on the communications connection for a real-time application flow from the terminal to be set up in connection with the communications session;

controlling, through manipulation of sending times of data packets, a bandwidth usage on the communications connection of at least one data flow from a non real-time application on the terminal so as to ensure that said required bandwidth is instantly available to said real-time application flow when it is set up.

9. A method according to claim 8, wherein the controlling step involves reducing the bandwidth usage on the communications connection of the at least one data flow from a non real-

time application in order to free bandwidth on the communications connection for the real-time application flow to be set up.

10. A method according to claim 8, wherein said step of determining said required bandwidth is done by a real-time application from an encoding method chosen for the real-time communications session during the set up of said session; the real-time application providing a flow control application with information regarding the required bandwidth; and wherein the step of controlling the bandwidth usage of the at least one data flow from a non real-time application based on said information received from the real-time application, is done additionally by a flow control application.

11. A method according to claim 8, including the step of investigating if a data packet to be sent from the terminal is an acknowledgment packet, and thus controlling the bandwidth usage of the at least one data flow to a non real-time application;

if the data packet is not an acknowledgment packet, determining by comparing the outgoing flow rate of the data flow with which the packet is associated to information based on said required bandwidth if it is time to send the data packet to a receiver; and

delaying the data packet, when it is not time to send it, until it is time to send the data packet to the receiver.

12. A communications terminal for handling real-time application flows and non real-time application flows, for connection to a communications system by using a communications connection with a predetermined limited bandwidth for carrying data flows, comprising:

a receiver for receiving, in the terminal, a set-up message for a real-time communications session;

a processor for deriving from information in the set-up message a required bandwidth which is required on the communications connection for a real-time application flow to the terminal to be set up in connection with the communications session; and

a flow controller for controlling, through manipulation of at least one protocol parameter, a bandwidth usage on the communications connection of at least one data flow to a non real-time application on the terminal so as to ensure that said required bandwidth is instantly available to said real-time application flow when it is set up.

13. A communications terminal according to claim 12, wherein said flow controller reduces the bandwidth usage on the communications connection of the at least one data flow to a non real-time application in order to free bandwidth on the communications connection for the real-time application flow to be set up.

14. A communications terminal according to claim 12, wherein the terminal comprises a real-time application arranged to receive said set-up message and derive said required bandwidth from information in the set-up message using an encoding method in the real-time communications session; and further wherein the terminal comprises a flow control application which receives

information from the real-time application regarding the required bandwidth, the flow control application being arranged to control the bandwidth usage of the at least one data flow to a non real-time application based on said information received from the real-time application.

15. A communications terminal according to claim 12, wherein the means for controlling the bandwidth usage on the communications connection of at least one data flow to a non real-time application comprises:

a processor for investigating if a data packet to be sent from the terminal is an acknowledgment packet;

said processor determining by comparing a window size of the acknowledgment packet to information based on said required bandwidth if the window size should be reduced, which window size defines a maximum amount of unacknowledged data packets that a receiver of the acknowledgment packet should be allowed to send to the terminal on the data flow with which the acknowledgment packet is associated; and

a window field reducing the window size by overwriting the window size with a lower value before sending said acknowledgment packet to the receiver.

16. A communications terminal according to claim 15, wherein the window field is arranged to overwrite the window size when the acknowledgment packet is in a transport layer.

17. A communications terminal according to claim 15, wherein the window field is arranged to overwrite the window size when the acknowledgment packet is in an Internet layer.

18. A communications terminal according to claim 15, wherein the window field is arranged to overwrite the window size when the acknowledgment packet is in a physical layer.

19. A communications terminal for handling real-time application flows and non real-time application flows for connection to a communications system by using a communications connection with a predetermined limited bandwidth for carrying data flows, comprising:

an encoder for initiating, in the terminal, a set-up of a real-time communications session;

a processor for determining a bandwidth required on the communications connection for a real-time application flow from the terminal to be set up in connection with the communications session; and

a flow controller for controlling, through manipulation of sending times of data packets, a bandwidth usage on the communications connection of at least one data flow from a non real-time application on the terminal so as to ensure that said required bandwidth is instantly available to said real-time application flow when it is set up.

20. A communications terminal according to claim 19, wherein said flow controller reduces the bandwidth usage on the communications connection of the at least one data flow from a non real-time application in order to free bandwidth on the communications connection for the real-time application flow to be set up.

21. A communications terminal according to claim 19, wherein the terminal comprises a real-time application arranged to determine said required bandwidth from an encoding method

chosen for the real-time communications session during the set up of said session; and wherein the terminal further comprises a flow control application which receives information regarding the required bandwidth, the flow control application being arranged to control the bandwidth usage of the at least one data flow from a non real-time application based on said information received from the real-time application.

22. A communications terminal according to claim 19, wherein said flow controller for controlling the bandwidth usage on the communications connection of at least one data flow from a non real-time application comprises:

a processor for investigating if a data packet to be sent from the terminal is an acknowledgment packet;

said processor determining by comparing the outgoing flow rate of the data flow with which the packet is associated to information based on said required bandwidth if it is time to send the data packet to a receiver; and

a window field for delaying the data packet until it is time to send the data packet to the receiver.

23. A software program arranged to run on a communications terminal in a communications system which handles real-time application flows and non real-time application flows, which terminal communicates by means of data flows carried over at least one communications connection with a predetermined bandwidth, the software program comprising a

code for receiving, in the terminal, a set-up message for a real-time communications session comprising:

code for deriving from information in the set-up message, using an encoding method to be used in the real-time communications session, a bandwidth required on the communications connection for a real-time application flow to the terminal to be set up in connection with the communications session; and

a code for providing a second software program on the terminal with information regarding the required bandwidth.

24. A software program arranged to run on a communications terminal in a communications system which handles real-time application flows and non-real time application flows, which terminal communicates by means of data flows carried over at least one communications connection with a predetermined bandwidth, said software program comprising:

a code for initiating, in the terminal, a set-up of a real-time communications session;

a code for determining, from an encoding method chosen for the real-time communications session during the set up of said session, a bandwidth required on the communications connection for a real-time application flow from the terminal to be set up in connection with the communications session; and

a code for providing a second software program on the terminal with information regarding the required bandwidth.

25. A software program arranged to run on a communications terminal in a communications system which handles real-time application flows and non real-time application flows, said terminal communicating by means of data flows carried over at least one communications connection with a predetermined bandwidth, the software program comprising:

a code for receiving from a second software program information regarding a bandwidth required on the communications connection for a real-time application flow to the terminal to be set up in connection with a real-time communications session; and

a code for controlling, through manipulation of at least one protocol parameter, a bandwidth usage on the communications connection of at least one data flow to a non real-time application on the terminal so as to ensure that said required bandwidth is instantly available to said real-time application flow when it is set up.

26. A software program according to claim 25, wherein said code for controlling comprise code for reducing the bandwidth usage on the communications connection of the at least one data flow to a non real-time application in order to free bandwidth on the communications connection for the real-time application flow to be set up.

27. A software program according to claim 25, wherein said code for controlling comprises:

a code for investigating if a data packet to be sent from the terminal is an acknowledgement packet;

a code for determining by comparing a window size of the acknowledgement packet to information based on said required bandwidth if the window size should be reduced, which window size defines a maximum amount of unacknowledged data packets that a receiver of the acknowledgement packet should be allowed to send to the terminal on the data flow with which the acknowledgement packet is associated; and

a code for reducing the window size by overwriting the window size with a lower value before sending said acknowledgement packet to the receiver.

28. A software program according to claim 27, wherein the code for overwriting the window size is arranged to overwrite the window size when the acknowledgement packet is in a transport layer.

29. A software program according to claim 27, wherein the code for overwriting the window size is arranged to overwrite the window size when the acknowledgement packet is in an Internet layer.

30. A software program according to claim 27, wherein the code for overwriting the window size is arranged to overwrite the window size when the acknowledgement packet is in a physical layer.

31. A software program arranged to run on a communications terminal in a communications system which handles real-time application flows and non real-time application flows

to a receiver, which terminal communicates by means of data flows carried over at least one communications connection with a predetermined bandwidth, the program comprising:

a code for receiving from a second software program, information regarding a required bandwidth which is required on the communications connection for a real-time application flow from the terminal to be set up in connection with a real-time communications session; and

a code for controlling, through manipulation of sending times of data packets, a bandwidth usage on the communications connection of at least one data flow from a non real-time application on the terminal so as to ensure that said required bandwidth is instantly available to said real-time application flow when it is set up.

32. A software program according to claim 31, wherein the code for controlling comprises code for reducing the bandwidth usage on the communications connection of the at least one data flow from a non real-time application in order to free bandwidth on the communications connection for the real-time application flow to be set up.

33. A software program to claim 31, wherein the code for controlling comprises:

a code for investigating if a data packet to be sent from the terminal is an acknowledgment packet;

a code for determining by comparing an outgoing flow rate of the data flow with which the packet is associated to information based on said required bandwidth if it is time to send the data packet to a receiver; and

a code for delaying the data packet until it is time to send the data packet to the receiver.